

CLEAN AIR TASK FORCE

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SUPPLEMENTAL COMMENTS ON THE DRAFT SUMMARY RECOMMENDATIONS OF THE COMMONWEALTH ADVANCED BIOFUELS TASK FORCE

The Clean Air Task Force (CATF) is grateful for the opportunity to submit these supplemental comments on the Commonwealth Advanced Biofuels Task Force's Draft Summary Recommendations of March 6, 2008. CATF is a Boston-based nonprofit organization dedicated to restoring clean air and healthy environments through scientific research, public education, and legal advocacy. The following comments and observations are intended to supplement testimony that CATF delivered to the ABTF on January 17, 2008.

LIFECYCLE ANALYSES

In January 2008 testimony and in a teleconference with Massachusetts policymakers on August 13, 2007, CATF discussed the threat to climate stability posed by direct and (more crucially) indirect greenhouse gas (GHG) emissions from land use changes associated with biofuel production. As stated at the January hearing:

If farmers are incentivized to use their fields to grow crops for energy instead of food – whether they are growing soybeans, switchgrass, or something else – the food must be grown elsewhere ... [The] negative climate impacts from converting forest or grassland to farmland overwhelm even the most optimistic assessments of the annual climate benefit derived from biofuels made from energy crops grown on what was formerly food-producing farmland.¹

These concerns have been detailed in several reports and articles that came out shortly after the January hearing. Two of the articles, published in *Science* by Searchinger *et al.* and Fargione *et*

¹ Testimony of Jonathan Lewis, Clean Air Task Force, to Massachusetts Advanced Biofuel Task Force, January 17, 2008, Boston, MA.

al., are fully described in comments submitted to the ABTF by Environment Northeast on March 14, 2008.² Two other reports also merit the ABTF's attention:

- A companion study by Tim Searchinger and Ralph Heimlich that analyzes soy-based biodiesel in the same way that their February 2008 *Science* piece considers ethanol. Using that methodology to fully account for indirect land use emissions, Searchinger and Heimlich concluded that the GHG emissions associated with the use of biodiesel made from US-grown soybeans would be 75-158% higher than the emissions from conventional diesel. This report can be downloaded at: <http://www.catf.us/projects/climate/biofuels/>
- A memo that University of California-Berkeley professors Alex Farrell and Michael O'Hare released in January 2008 that essentially previewed the findings in Searchinger *et al.* Among other things, Farrell and O'Hare found that if the indirect emissions associated with biofuels were properly accounted for, the carbon intensity of California's *existing* gasoline would be as much as 33% higher due to the amount of ethanol the gas already contains. The policy implications of this finding are significant – for example, California (and other jurisdictions considering the adoption of Low Carbon Fuel Standards) will need to revise transportation section GHG baselines significantly upward to account for the climate impact of biofuels already blended into the fuel mix. The memorandum by Farrell and O'Hare can be downloaded at: <http://www.arb.ca.gov/fuels/lcfs/lcfs.htm>³

In light of these concerns, the ABTF is to be commended for the lifecycle analysis (LCA) safeguards proposed in Chapter 2 of its Draft Summary Recommendations, particularly those in paragraphs A and C. Indeed, Massachusetts should judge any potential biofuel policies according to a full lifecycle evaluation of the direct and indirect impact such policies would have on climate, the environment in general, and the economy. As recommended by the ABTF, Massachusetts should only support the “development and/or use” of biofuels that “provide a substantial reduction in greenhouse gas emissions relative to petroleum fuels on a lifecycle basis.”⁴

Given the ABTF's recognition of the central role that LCAs must play in the development of sensible biofuels policy, it is unclear why the Task Force would suggest that any feedstocks – even those derived from waste – should be “exempt ... from full life-cycle greenhouse gas emissions analysis.”⁵ While it may be true that biofuels made from waste products are “likely to have lower greenhouse gas emissions and environmental impacts than biofuels from virgin materials,”⁶ experience has taught us that we cannot afford to let assumptions about the climate impact of biofuels go unexamined.⁷

² Supplemental Comments of Environment Northeast to the Massachusetts Advanced Biofuel Task Force's Draft Summary Recommendations, March 14, 2008, at 2-3.

³ The Farrell/O'Hare memo can be found by scrolling down to the entry for the California Air Resources Board's meeting on January 17, 2008.

⁴ Commonwealth Advanced Biofuel Task Force, Draft Summary Recommendations (March 6, 2008), at Ch. 2, ¶ C (hereinafter “ABTF Summary”).

⁵ ABTF Summary, Ch. 2, ¶ D.

⁶ ABTF Summary, Ch. 2, ¶ D.

⁷ See, generally, CATF, “Leaping Before They Looked: Lessons from Europe's Experience with the 2003 Biofuel Directive (2007) (<http://www.catf.us/projects/climate/biofuels/>).

WASTE AND ALGAE FEEDSTOCKS

CATF supports the ABTF's recommendation in Chapter 3 that Massachusetts focus its enormous capacity for innovation on the development, demonstration, and commercialization of low-carbon waste and algae feedstocks.⁸

LOW CARBON FUEL STANDARD

The ABTF's reorientation towards a Low Carbon Fuel Standard⁹ (LCFS) represents a substantial improvement over its previous focus on volumetric mandates. Whereas volumetric mandates simply assume that production and usage of a chosen fuel (e.g., biodiesel) will benefit climate, a properly designed LCFS would favor only those fuels with lifecycle climate impacts (including direct and indirect emissions of CO₂ and other greenhouse gases, changes to landscape albedo, changes to hydrology, etc.) that are demonstrably less problematic than the full range of climate impacts associated with petroleum.

Before an LCFS-based policy can properly address biofuels, however, numerous structural issues need to be resolved. The LCFS concept, as it is typically described, assumes that a net GHG value can be assigned to various biofuel types, and that the fuels can then compete with each other and other "low-carbon fuels" on the basis of those values. This approach raises two problems. First, a unit of a given type of biofuel does not have a constant net GHG value. Rather, the impact of each incremental unit of fuel depends on the total volume of fuel being produced as a result of the underlying policy and the resulting climate impacts associated with that level of production. For example, because the likelihood of crop displacement and indirect land use-related emissions increases with the amount of biofuel produced, an incremental gallon of soy-derived biodiesel produced in response to a policy that incentivizes the consumption of five million gallons of soy biodiesel will impact climate differently than an incremental gallon of soy biodiesel produced in response to a five billion-gallon policy. In order to account for this variable impact, policymakers would have to project how much biofuel production an LCFS is likely to incentivize and then adjust the GHG value for each type of biofuel accordingly. Second, the LCFS approach needs to be expanded to include the full panoply of climate impacts associated with biofuel consumption and use. In addition to direct and indirect emissions of *all* relevant greenhouse gases (not just CO₂), this requires consideration of the various non-GHG climate impacts brought about by biofuels, such as changes in land surface reflectivity and hydrology. Due to the degree of complexity and uncertainty inherent to these considerations, Massachusetts may find that including biofuels in an LCFS is infeasible.

TRANSITIONAL MANDATES

CATF remains strongly opposed to volumetric mandates, including those proposed in Chapter 4, paragraph D, of the Draft Summary Recommendations and the provisions in sections 3 and 4 of

⁸ See ABTF Summary, Ch. 3, ¶¶ A, D.

⁹ ABTF Summary, Ch. 4, ¶¶ A, B.

the bill filed in the Massachusetts Senate and House of Representatives on November 5, 2007, titled “An Act Furthering the Biofuels Clean Energy Sector.”¹⁰ Even so-called “transitional mandates” have the potential to affect agricultural markets in ways that threaten climate stability, food security, and biodiversity. As described in the CATF report, *Leaping Before They Looked*,¹¹ relatively modest volumetric mandates can contribute to an array of unintended and undesirable environmental and social outcomes.

Respectfully submitted,
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¹⁰ See Testimony of Jonathan Lewis, Clean Air Task Force, to Massachusetts Advanced Biofuel Task Force, January 17, 2008, Boston, MA.

¹¹ See <http://www.catf.us/projects/climate/biofuels/>.